

## PATENT SPECIFICATION



Application Date: April 28, 1937. No. 12096/37.

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" " Oct. 5, 1937. No. 26913/37.

One Complete Specification Left: April 27, 1938.

(Under Section 16 of the Patents and Designs Acts, 1907 to 1932).

Specification Accepted: Oct. 28, 1938.

## PROVISIONAL SPECIFICATION

No. 12096 A.D. 1937.

Improvements in or relating to Electric Lighting Fixtures or  
Fittings for Cabins, Rooms and similar Interiors

I, GILBERT ALLOM, of 16, Grosvenor Place, London, S.W.1, British Nationality, do hereby declare the nature of this invention to be as follows:—

5 This invention relates to electric lighting fixtures or fittings for cabins, rooms and similar interiors and refers more particularly to what are known as "bulkhead lights" used for illuminating cabins and  
10 similar low-roofed interiors by indirect or reflected lighting.

In such circumstances and conditions it has hitherto been difficult to obtain sufficient and efficient lighting or illumination, without some of the light rays or  
15 beams being projected in a way as to interfere with the comfort or convenience of a person in the cabin or room.

It is the chief object of the present invention to overcome such drawbacks or defects and provide a bulk-head lighting  
20 fixture or fitting whereby a flat fan-shaped beam of light will be projected or emitted in an upwardly inclined direction on to the roof to illuminate the cabin or  
25 interior and prevent any light rays from passing to the body of the cabin in a way that would interfere with the comfort or convenience of an occupant.

30 It is also an object of this invention to contrive or arrange the fixture or fitting that the source of light will be shaded so as to render it invisible to an occupant of the cabin.

35 According to the present invention, the light fixture or fitting comprises an electric lamp set in the face of the bulk-head or the like and a parabolic reflector arranged behind the lamp and at such an  
40 angle thereto that a flat fan-shaped beam of reflected light will be directed in an upwardly inclined direction on to the roof. In front of the lamp and reflector is

arranged a series of flat translucent or transparent slats or louvres which are also  
45 upwardly inclined and between which the reflected rays or beams pass freely.

These slats or louvres are so arranged relatively to the lamp and the reflector that while allowing the beam of light to  
50 pass freely between them to the roof, they shade both lamp and reflector from direct observation from the front.

These louvres or the like are supported at their opposite ends in inclined slots  
55 or supports in two upright bars or brackets mounted at opposite sides of the fitting.

The rear edges of the louvres are straight and are parallel with one another.  
60

The forward edges of the louvres may be curved and the louvres themselves may be stepped or graduated from the  
65 centre one, to those at both ends of the series so that they form a skeleton dome conforming approximately to a dome or bowl-shaped glass cover, which forms an outer closure or cap for the fitting.

These louvres are preferably made of glass and their lower surfaces may be  
70 frosted or otherwise treated to minimise any bright reflection from them. Such louvres prevent glare and become illuminated to a moderate degree and produce a pleasing effect, but they may be con-  
75 structed of material other than glass.

These louvres may be otherwise shaped in accordance with the desired arrangement of fitting.

The parabolic reflector may be plain or  
80 a single piece or it may be built up of a series of strips which are flat in the direction of width and curved lengthwise.

Dated this 23rd day of April, 1937.

WM. J. DOW, F.C.I.P.A.,  
Agent for the Applicant.

[Price 1/-]

Price 75p

## PROVISIONAL SPECIFICATION

No. 26913 A.D. 1937.

**Improvements in or relating to Electric Lighting Fixtures or Fitments for Rooms and other Interiors**

I, GILBERT ALLOM, of British Nationality 16, Grosvenor Place, London, S.W.1, do hereby declare the nature of this invention to be as follows:—

- 5 This invention relates to electric lighting fixtures or fitments for rooms or other interiors and refers to systems or arrangements wherein the desired illuminating is effected or produced by reflected or indirect lighting.
- 10 Hitherto such illumination has been produced by arranging a number or series of comparatively low powered electric lamps or bulbs at intervals around the upper parts of the walls of a room and by an arrangement of reflectors directing the rays from such lamps at an appropriate angle on to or towards the roof or ceiling, at the same time shielding or concealing
- 15 the lamps from direct lighting or observation by a cornice, moulding or similar device. Such systems are costly to work owing to the current consumption, the excessive number of lamps employed and the resultant generation of heat, also in some cases the inconvenience in handling the lamps. Furthermore the illumination produced in such systems is lacking in uniformity. With such arrangements,
- 20 also, when colour schemes are desired, for instance a three colour scheme of lighting, duplication of the lamps is necessary for each required colour.
- 25 Somewhat similar illumination has also been proposed wherein a series of lamps with reflectors are placed or shielded in bowls arranged at intervals around the walls of a room, the rays as in the previously mentioned arrangement, being
- 30 directed on to the roof or ceiling.
- 35 In this arrangement also a comparatively large number of low powered lamps are employed and the distribution of lighting is uneven.
- 40 The chief object of the present invention is to provide a fitting or fitment which will produce a highly efficient and even or uniform distribution of lighting over a comparatively large area, will be economic
- 45 in working and wherein a maximum amount of light rays will be directed at an appropriate angle on to the roof or ceiling while the source of light will be shielded from direct observation and
- 50 direct light rays prevented from striking or falling upon any person or object on the floor of the room.
- 55 A further object of the present inven-

tion is to provide handy and efficient means whereby the colour of the light reflected or emitted may be changed comparatively quickly as desired.

Such deficiencies are obviated by the present invention, according to which a comparatively small number of high power light units are employed each capable of illuminating evenly a comparatively large surface or area and in addition, for colour effects a simplification in operation and effect is produced and without the employment of a large number of colour screens.

According to the present invention there is provided a self-contained unit comprising two or more comparatively high power electric lamps, a high power reflector arranged behind each lamp and a series of louvres arranged in front of the lamps, the lamps reflectors and louvres being mounted or fitted within a chamber or panel which can be secured to or on, or let into, a wall of the room.

In addition to the aforesaid high power lamps, there may be provided a number of comparatively low-power lamps arranged along the sides of the panel or unit and such lamps may be provided with reflectors so that the light rays therefrom may be projected on to or through the louvres arranged in front of the high power lamps.

The reflectors employed are preferably parabolic in shape. They may be formed of a single piece or may consist of a number of strips which are flat in the direction of width and be bent or curved lengthwise.

In accordance with the present invention the high power lamps, for example two, are arranged preferably one over the other at or towards the rear of a panel or a chamber or recess therein and the said panel may be of rectangular or other appropriate shape. Behind or at the rear of each lamp is arranged a parabolic reflector positioned relatively to its particular lamp so as to project a flat fan-shaped beam of light towards or on to the ceiling or roof of the room or other interior and also if desired on to the upper portion of the walls of such interior. In the front of the panel is arranged a series of flat translucent or transparent slats or louvres which are inclined upwards at such an angle as to allow the rays or beam of light to pass freely between and not be obstructed by them.

As the number of coloured screens is small, these are conveniently of glass thus rendering the equipment more permanent.

5 The louvres or slats may be detachably or otherwise supported at their ends in the side members of the panel or unit or in supports carried thereon.

10 The lamps, light screens, reflectors and louvres for a unit may be carried on a hinged or other movable frame so that the various parts may be readily accessible for handling.

15 Along each side of the panel and out of the path of the rays or beam of light from the main or high power lamps are a series of comparatively low power lamps each furnished with a reflector, preferably of parabolic formation, so arranged as to 20 project the rays from such low power lamps on to or through the louvres which constitute the front of the panel or unit. The low-power lamps alongside the upper power lamps are placed in the circuit of 25 the lower high-power lamp and *vice-versa*. With this arrangement, when only one of the high power lamps, say the upper one is in operation, then the low-power lamps at the sides of the lower high- 30 power lamp may be used to produce a glow of light over the lower louvres, giving a pleasing effect to the entire panel.

35 An important feature of the present invention is that, in addition to providing a highly efficient and economic system of illumination by indirect or reflected lighting, it provides for an easy and efficient change of colour in the light projected. One high power lamp in a panel 40 may be contrived to emit rays of one colour, for example red and another high-

power lamp in the same unit or panel may be contrived to emit rays of another colour, for example blue. In such cases the small 45 lamps alongside the red high-power lamp may emit blue rays whilst the small lamps alongside the blue high-power lamp will emit red rays. Thus when, for example, the red high-power lamp is in 50 use the louvres in front of the blue high-power lamp will be given a red glow by the small lamps alongside the blue high-power lamp, so that the entire panel of louvres will be given an even glow of one 55 colour.

The two-high-power lamps of different colours and their related low-power lamps may be used at the same time, in which case the colour projected on to or towards 60 the ceiling will be a combination of the two colours separately projected.

When the fitment is arranged to produce such change of colour effects 65 dimmers may be provided in the circuits so that a gradual change, from one colour to another can be effected.

Units or panels as above described may be arranged at intervals around the walls 70 of a room so that the interior thereof can be efficiently illuminated by a comparatively few number of such high power units.

The positions of the reflectors relatively to the lamps and the angle of inclination 75 of the louvres will be determined by the dimensions of the room and the surface to be covered by each unit and the louvres will be arranged to prevent glare and so that direct light from the lamps and re- 80 flectors is obviated.

Dated this 30th day of September, 1937.

WM. J. DOW, F.C.I.P.A.,

Agent for the Applicant.

## COMPLETE SPECIFICATION

### Improvements in or relating to Electric Lighting Fixtures or Fitments for Rooms and other Interiors

I, GILBERT ALLOM, of 18, Grosvenor Place, London, S.W., British Nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

85 This invention relates to electric lighting fixtures or fitments for rooms or other interiors and refers to systems or arrangements wherein the desired illumination is effected or produced by reflected or indirect lighting.

95 In small rooms, cabins, or low roofed interiors, difficulty has been experienced hitherto in providing either sufficient or

efficient lighting or illumination, and an even distribution of light without some of the light rays or beams being projected in a way that interferes with the comfort or convenience of a person in the room or the like. 100

In cases of large rooms, salons, halls or the like, reflected lighting has been produced hitherto by arranging a number of comparatively low-power electric lamps at intervals around the upper parts of the walls or uprights of the room and by an arrangement of reflectors directing the 105 rays from such lamps at an appropriate angle towards the roof or ceiling, at the same time shielding or concealing the 110

lamps from direct lighting or observation, by a cornice, moulding or similar device. Such systems are costly to work owing to the current consumption, the excessive

5 number of lamps necessarily employed and the resultant generation of heat, also in some cases, there is inconvenience in handling the lamps. Furthermore the illumination produced in such systems is  
10 lacking in uniformity of distribution. With such arrangements, also, when colour schemes are desired, for instance a three colour scheme of lighting, duplication of the lamps is necessary for each  
15 required colour.

Somewhat similar illumination has also been proposed wherein a series of lamps and reflectors are placed or shielded in bowls arranged at intervals around the  
20 walls of a room, the rays, as in the previously mentioned arrangement, being directed towards the roof or ceiling. In this arrangement also a comparatively large number of low power lamps are  
25 employed and the distribution of lighting is uneven.

There has hitherto been proposed, for the illumination of apartments and other interiors, apparatus comprising the combination of lamps in close contact to the  
30 ceiling to prevent the formation of all thrown shadows, with one or more optical arrangements directing the luminous rays emitted by the lamps into planes parallel  
35 with one another and together covering the ceiling, in eventual combination, with accessory non-dazzling and directing members with the object of directing the whole of the luminous flux emitted by the  
40 lamps on to the ceiling.

The chief object of the present invention is to provide a fitting or fitment which will produce a highly efficient, and uniform distribution of lighting over  
45 a comparatively large area, including portions of the ceiling and walls of the chamber room or the like, will be economic in working and wherein a maximum amount of light rays in the form of a fan-shaped beam will be directed at an appropriate angle towards the roof or ceiling  
50 while the source of light will be shielded from direct observation and direct light rays provided from passing to the body of the room or the like in such a manner as  
55 to interfere with the comfort or convenience of an occupant thereof.

A further object of the present invention is to provide handy and efficient means whereby the colour of the reflected light emitted, may be changed comparatively quickly as desired.

Other deficiencies above referred to are obviated by the present invention, according to which one or a comparatively small

number of high-power light units is or are employed capable or each capable of illuminating evenly a comparatively large surface or area.

In addition, for colour effects, a simplification in operation and a satisfactory effect are provided without the employment of a large number of colour screens.

According to the present invention there is provided a fitting or fixture  
75 mounted on or in a wall for illuminating a room or other interior by reflected light comprising one or more electric lamps, a parabolic reflector arranged behind the lamp or behind each lamp to project a flat  
80 fan-shaped beam of light directly outwardly and upwardly and a vertical bank or series of upwardly inclined flat transparent or translucent louvres or slats  
85 arranged in front of the fitting, and between which the light from the reflector or reflectors can pass freely in an upward direction to cover a comparatively large area including both ceiling and wall.

The lamp or lamps, reflectors and louvres are mounted or fitted within a chamber or panel which can be secured to or on, or let into, a wall or side of the room or other interior.

In addition to the aforesaid high-power  
95 lamp or lamps, there may be provided a number of comparatively low-power lamps arranged along the sides of the said panel or unit and such lamps may be provided with reflectors so that the light rays  
100 therefrom may be projected on to or through the louvres arranged in front of the high power lamp or lamps.

The reflectors employed are parabolic in shape. They may each be formed of a  
105 single piece or each may consist of a number of strips which are flat in the direction of width and be bent or curved lengthwise.

Referring to the accompanying drawings:—

Fig. 1 is a vertical section of one form of light-fitting embodying the present invention suitable for a small room or  
115 interior.

Fig. 2 is a front elevation, partly in section of the fitting shown in Fig. 1.

Fig. 3 is a plan partly in section of Fig. 2.

Fig. 4 is an elevation, partly in section, of an embodiment of the invention suitable for a large room, hall, saloon, or similar interior.

Fig. 5 is a plan of the arrangement shown in Fig. 4 and  
125

Fig. 6 is a sectional elevation of a part of the same embodiment.

Referring first to the embodiment illustrated in Figs. 1 to 3, this shows a simple embodiment of the invention suitable for  
130

a comparatively small room, cabin, or similar interior.

In this particular embodiment, an electric lamp A is hung from or supported in a bracket or holder *b* which in turn is secured within the upper end of a casing B. This casing may be set in or let into the face of a wall or side or an upright X of the room or interior.

Behind the lamp A is mounted a parabolic reflector C which may be secured by its upper and lower ends by screws *c* or other appropriate means to the casing B.

This parabolic reflector may be plain and constructed of a single piece, as indicated at C, or it may be constructed of a number or series of properly shaped strips which are flat in their direction of width and curved lengthwise, as indicated in Figs. 4 to 6.

This parabolic reflector is arranged at such an angle relatively to the lamp as to project a flat fan-shaped beam of reflected light in an upwardly-inclined direction towards the roof or ceiling.

A vertical series or bank, of flat, upwardly inclined, transparent or translucent slats or louvres D, is mounted in front of the lamp A. These slats or louvres are so arranged as to allow the light to pass freely between them in an upwardly inclined direction and also so as to shield both the lamp and the reflector from direct observation from the front of the fitting.

The opposite ends of the slats or louvres D are conveniently supported in a series of inclined slots *e* in two upright bars E mounted at opposite sides of the fitting or of the casing B.

In this embodiment, the rear edges of the slats or louvres D are straight and parallel with each other whilst the forward edges are curved. Furthermore the louvres are stepped or graduated from the centre one towards both ends so that they form a skeleton dome which, conforms approximately to the shape of a dome or bowl-shaped glass cover or closure F which is hinged to the fitting and forms an outer closure or cap therefor.

The embodiment of the invention illustrated in Figs. 4, 5 & 6 is suitable for larger interiors, than that already described, and one or more of such units may be employed for large rooms, halls, salons and the like, which may also have fairly lofty ceilings.

In this embodiment two or more comparatively high-power lamps may be employed in the unit or in each unit.

The chamber or panel B, which may be secured to or let into a wall or other upright, is rectangular in shape and two comparatively high-power lamps A are

mounted within the said chamber, (see Fig. 4) one at a higher level than the other. Each lamp A is furnished with a parabolic reflector C in a similar manner to that already described with reference to Figs. 1 to 3. The parabolic reflectors are each arranged relatively to the respective lamp, so as to direct or project a flat fan-shaped beam of light outwardly and upwardly towards the roof or ceiling of the room or other interior and also if desired on to the upper portions of the walls of such interior. These reflectors as indicated are each preferably made from a series of strips which are flat widthwise and bent lengthwise to the required form.

In front of the lamps A is a vertical bank or tier of flat, transparent or translucent louvres or slats D which are superposed and inclined upwardly, as in the hereinbefore described arrangement. These louvres or slats D are supported by their opposite ends in a frame B1 which forms the front of the casing B. In this embodiment the flat louvres or slats D have straight parallel edges (see Fig. 5) but the edge or edges may be curved, as in the arrangement first above described.

Along each side of the two high-power lamps A and within the panel or chamber B, are arranged series of comparatively low-power lamps G, G1 so placed as to be outside the path of the beams from the main reflectors C.

Each lamp G or G1 is provided with a parabolic reflector H or H1 and such reflectors are arranged relatively to their respective lamps so as to project rays or beams of reflected light onto or between the louvres or slats D. The reflectors for the low-power lamps are omitted from Fig. 4 for the sake of clearness of representation.

In the arrangement illustrated two comparatively low-power lamps G G1 are arranged at each side of one of the high-power lamps A.

These low-power lamps G G1 may be employed in several ways in conjunction with the high-power lamps A. For example, the two low-power lamps of each series, arranged at each side of the upper high power lamp A may be in circuit with the lower high-power lamps and *vice versa*. With such an arrangement when only one high power lamp A is in operation, then the low power lamps G, G1 alongside the other high-power lamp may be used alone to produce a glow of light in the louvres or slats D in front of the high-power lamp which is not in operation, thus giving a pleasing appearance or effect to the entire panel.

The arrangements above described provide a highly efficient and economic system

of illumination by indirect or reflected lighting for interiors ranging say from a small room or cabin to a large room or hall, or salon, the size and shape of the panel or unit and the number of high-power lamps employed also the number of units or fittings, being determined by the size of the interior to be illuminated and the intensity of light desired.

In addition to this, the invention particularly with the embodiment described with reference to Figs. 4, 5 & 6 provides for an efficient colour illumination and for any easy change in the colour of the light projected. For example, one high power lamp A may be contrived to emit light of one colour, say red, and the other high-power lamp A in the same unit, may be contrived to emit light of another colour say blue. The low-power lamps G. & G1. on each side of the red high-power lamp may be contrived to emit blue light, and the low-power lamp on each side of the blue high-power lamp may be contrived to emit red light.

Thus, when, for example, the red high-power lamp A alone is in operation, the louvres D in front of the blue high-power lamp can have imparted to them a red glow by the low-power lamps arranged at each side of the blue high-power lamp, so that the entire series of louvres will be given an even glow of one colour corresponding to the colour of the high-power lamp in operation.

On the other hand the two high-power lamps, each emitting a different colour of light, may be used at the same time and the related low-power lamps may be used with them, so that the light reflected towards the ceiling will be a combination or blend of two colours.

The screens by which desired colour effects are produced are conveniently mounted between the respective lamps and the louvres.

A screen J of appropriate colour is mounted in a frame in front of the upper high-power lamp A, and a similar screen of appropriate colour is carried in the same frame in front of the lower high-power lamp.

Similarly a colour screen J1 of one colour is mounted in front of the low-power lamps G arranged at one side of the upper high-power lamp and a screen J2 of the same colour is arranged in front of the two low-power lamps G1 at the opposite side of the said high-power lamp A.

Colour screens J1 & J2 are also arranged in front of the low-power lamps G & G1 arranged at each side of the lower high-power lamp A.

Since the number of coloured screens

employed is small, these may be made of glass, thus rendering the equipment more durable or permanent.

When a fitting is contrived to produce changes in the colour of illumination, dimmers may be arranged in the lamp circuits so that a gradual change from one colour to another may be effected.

The lamps, light screens, reflectors and louvres are shown mounted in a framework within the panel B but these elements for a unit may be carried on a hinged or other movable frame so that the various parts may be readily accessible for handling.

Units or panels as above described may be arranged at intervals along or around the walls of a room or other interior so that a highly efficient and evenly distributed illumination of such interior can be effected with a comparatively small number of such units.

The position of the reflectors relatively to the lamps and the angle of inclination of the louvres will be determined by the dimensions of the room or the like, to be illuminated and the surface or area to be covered by the light projected by each unit. The louvres in all cases are arranged to prevent glare and to screen the lamps and direct light therefrom, from outside observation.

Preferably the louvres or slats D are made of transparent or translucent glass and their lower surfaces may be frosted or otherwise treated to minimise any bright reflection from them. Such louvres whilst preventing glare are illuminated to a moderate degree and produce a pleasing effect. The louvres may however be constructed of materials other than glass.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An electric light fitting or fixture mounted on or in a wall for illuminating a room or other interior by reflected light comprising one or more electric lamps, a parabolic reflector arranged behind the lamp or behind each lamp to project a flat fan-shaped beam of light directly outwardly and upwardly, and a vertical bank or series of upwardly inclined, flat, translucent or transparent louvres or slats arranged in front of the fitting and between which the light from the reflector or reflectors can pass freely in an upward direction to cover a comparatively large area including portions of both ceiling and wall.

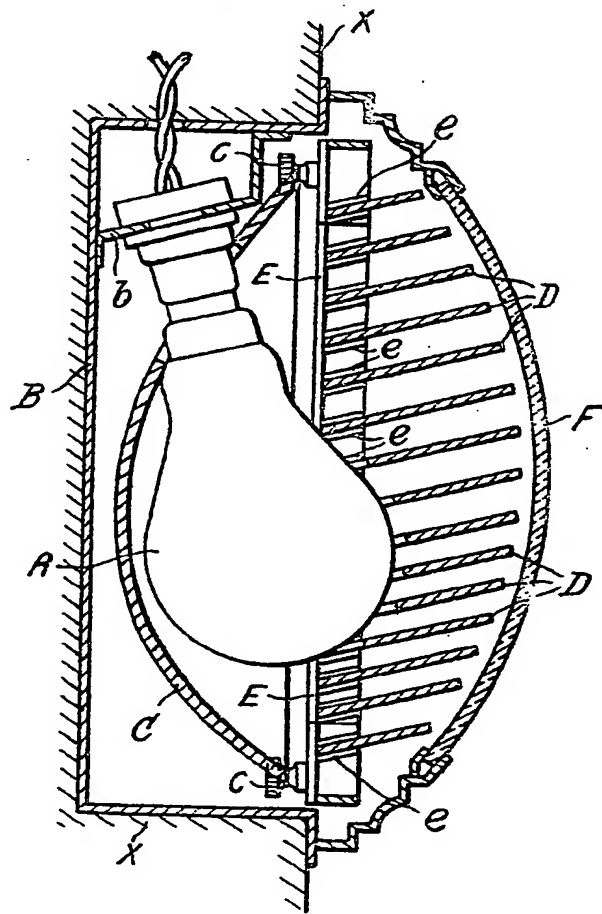
2. In an electric-light fitting or fixture mounted on or in a wall for illuminating a room or other interior by reflected light,

- the combination with two or more comparatively high-power electric lamps arranged at different levels, a parabolic reflector arranged behind each lamp to project a flat fan-shaped beam of light outwardly and upwardly, and a vertical bank or series of upwardly inclined, flat, transparent or translucent louvres or slats arranged in front of the lamps and reflectors, of a number of comparatively low-powered lamps arranged at opposite sides of each high-power lamp and a parabolic reflector arranged behind each low-power lamp, for the purpose described.
- 5 3. In an electric-light fitting or fixture, mounted on or in a wall for illuminating a room or other interior by reflected light, the combination with two or more comparatively high-power electric lamps arranged at different levels, a number of comparatively low-power lamps arranged at opposite sides of each of the high-power lamps and a vertical bank or series of flat, upwardly inclined, transparent or translucent slats or louvres arranged in front of the lamps, of a parabolic reflector arranged behind each lamp and a colour screen disposed between the louvres and each high-power lamp and each low-power lamp or group of low-power lamps.
- 10 4. An electric light-fitting mounted on or in a wall for illuminating a room or other interior by reflected light constructed and adapted to operate substantially as described with reference to Figs. 1 to 3 or Figs. 4 to 6 of the accompanying drawings.
- 15 Dated this 26th day of April, 1938.  
WM. J. DOW, F.C.I.P.A.,  
Agent for the Applicant.
- 20

Leamington Spa: Printed for His Majesty's Stationery Office, by the Courier Press.—1938.

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FIG. 1.



B-





FIG. 2.

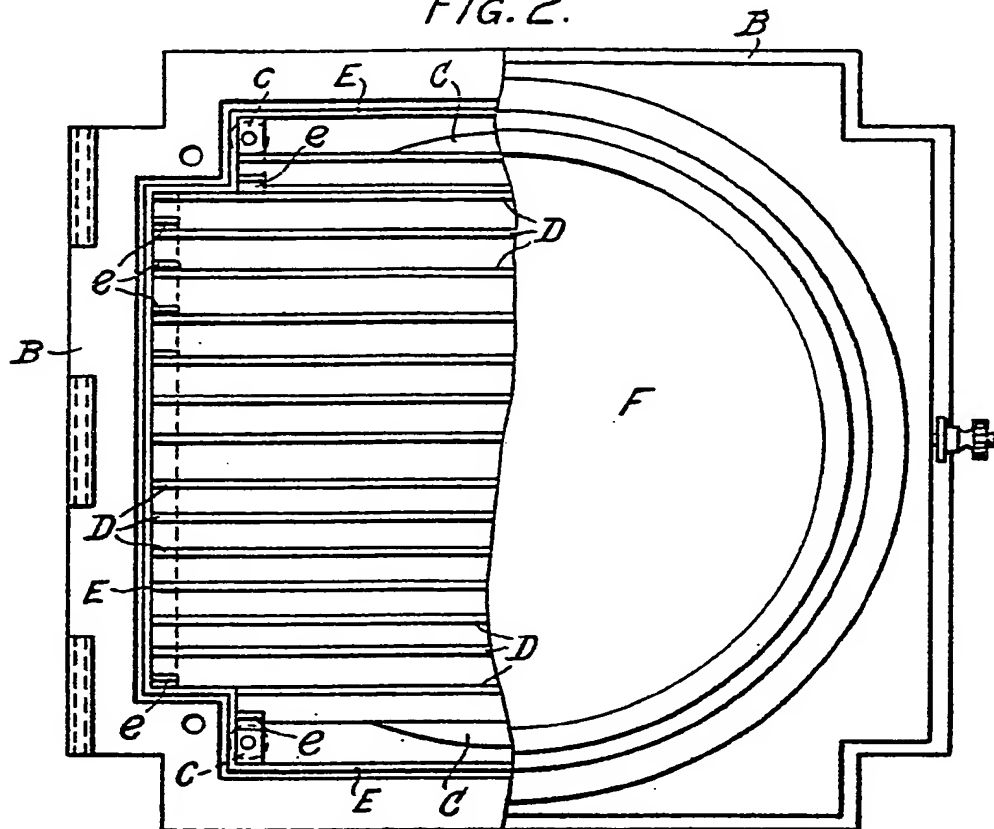
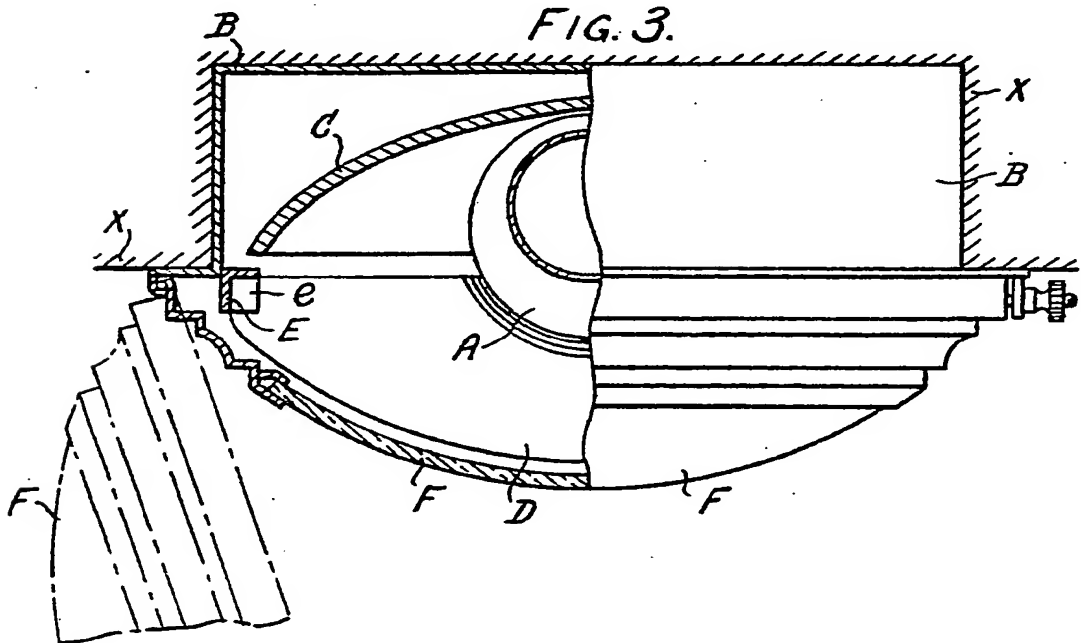


FIG. 3.



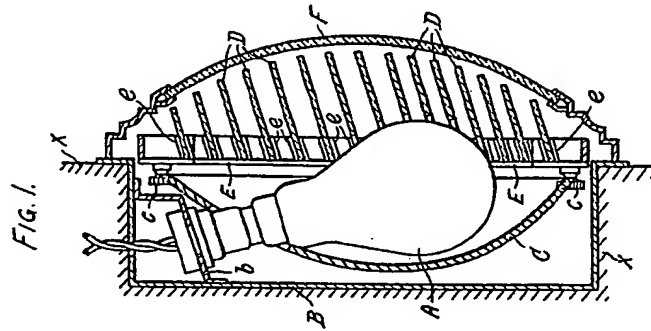


FIG. 1.

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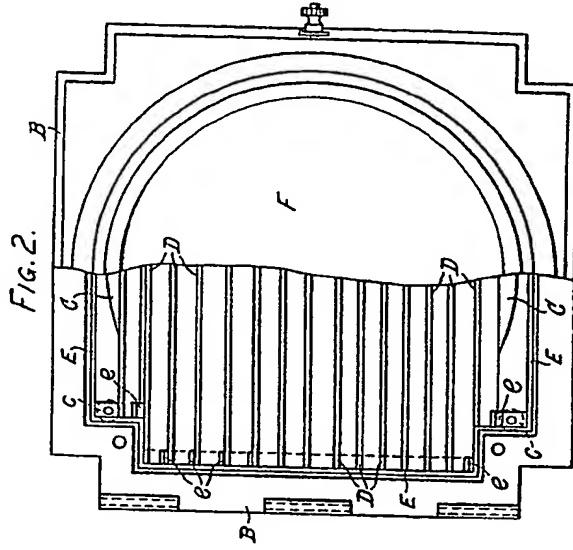


FIG. 2.

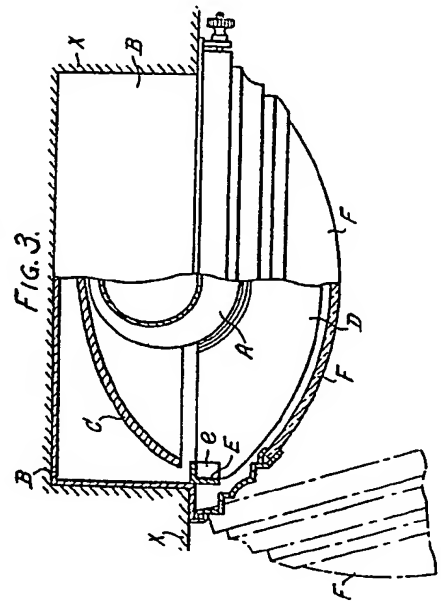
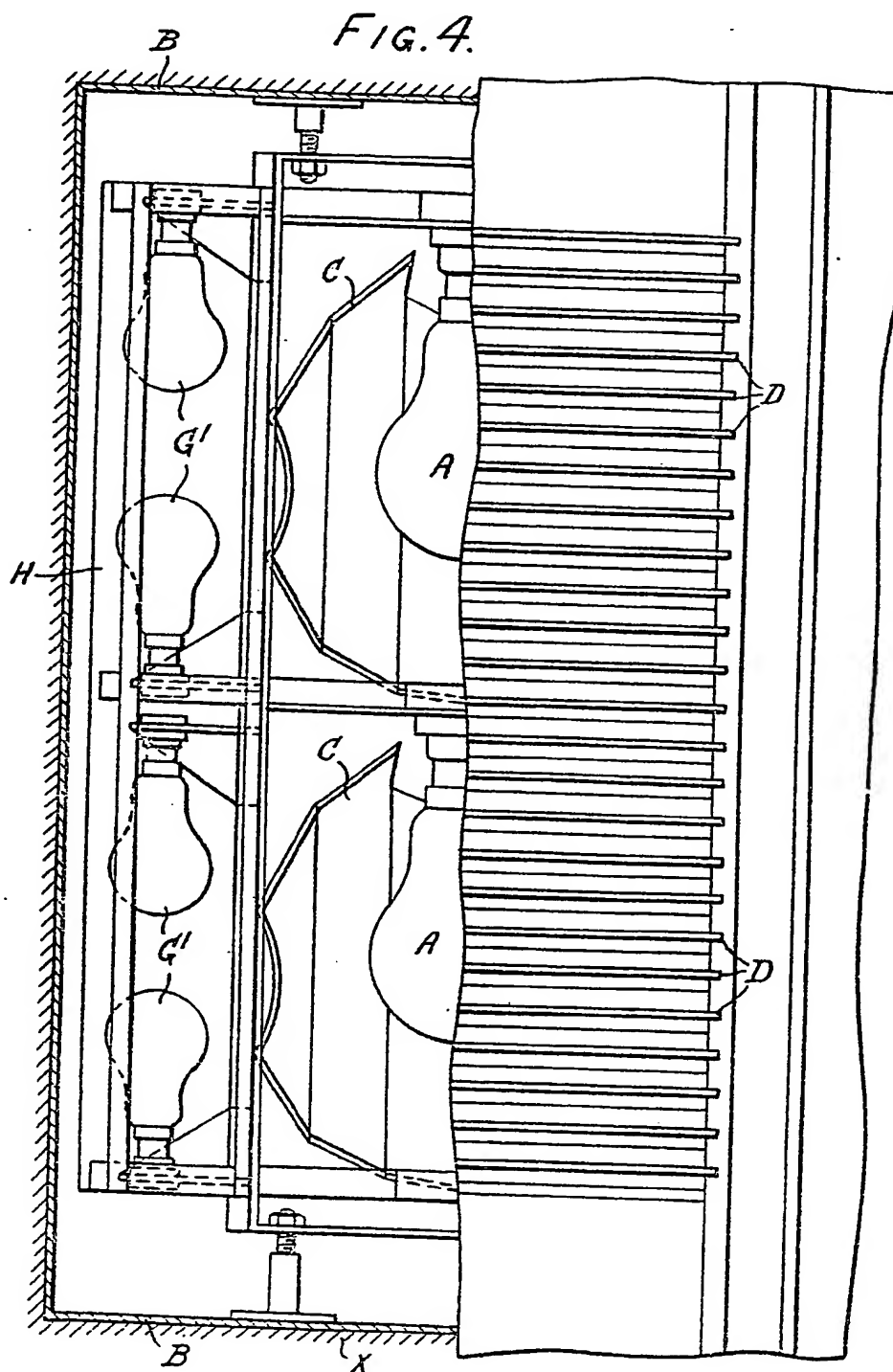
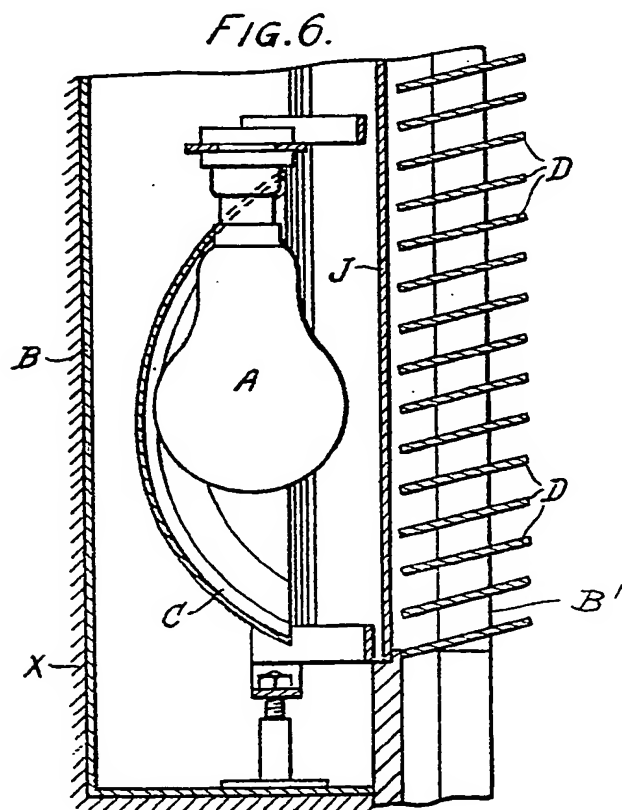
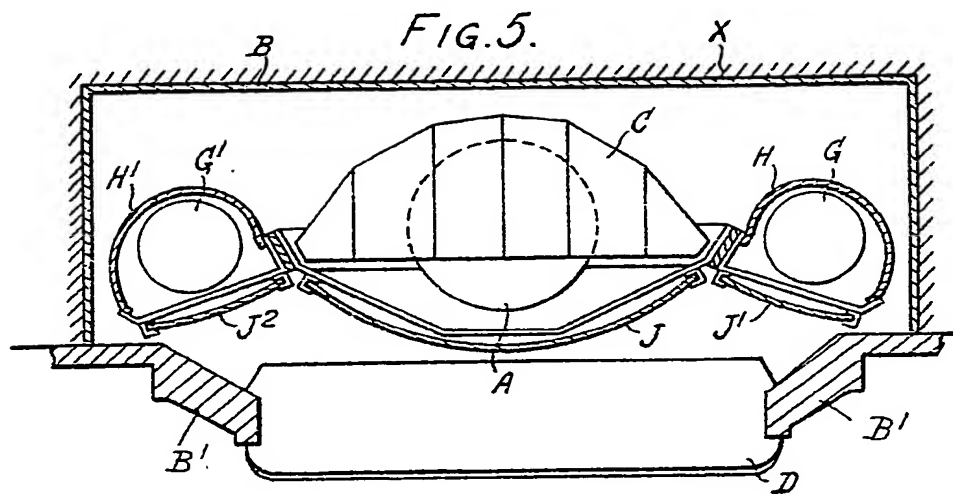


FIG. 3.

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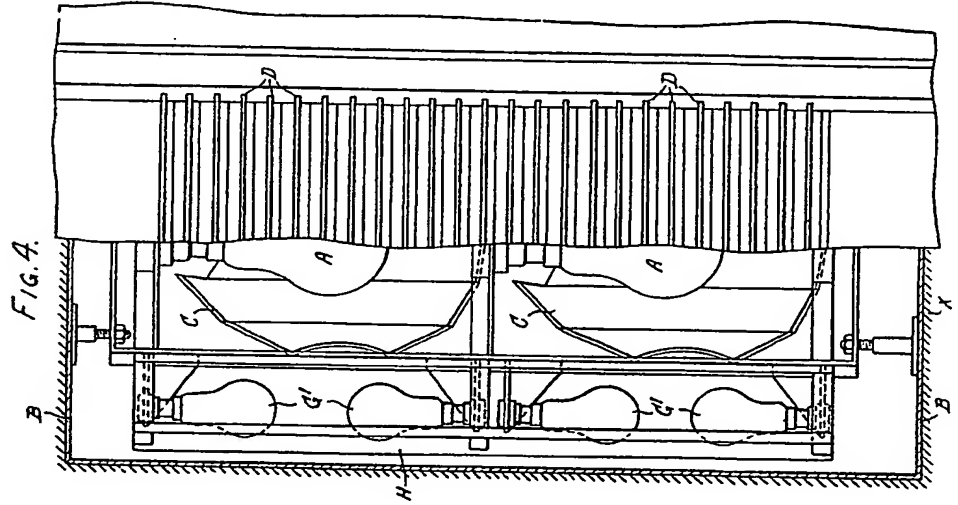


FIG. 4.

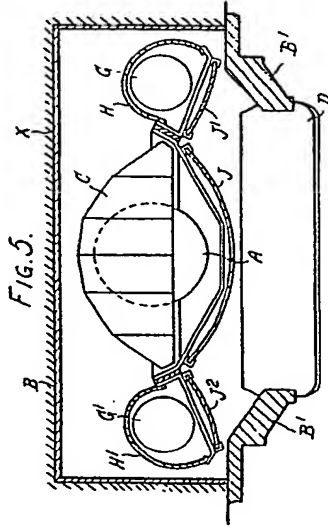


FIG. 5.

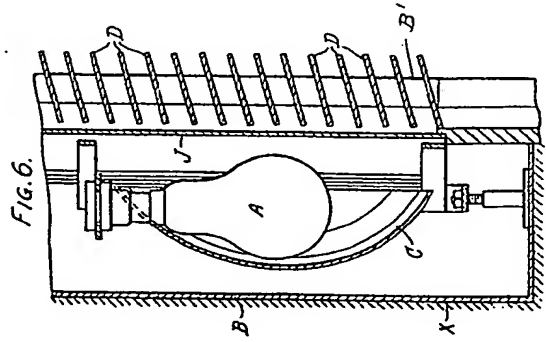


FIG. 6.

[This Drawing is a reproduction of the Original on a reduced scale]